Docket No. TSR-10002/38

Serial Number: 10/706,738

Reply to Office Action of September 18, 2006

AMENDMENTS TO THE CLAIMS

1-7 (Canceled)

8. (Currently Amended) A method of nucleic acid delivery to target cells of a

subject comprising the step of administering a conjugating agent-nucleic acid complex where the

conjugating agent comprises A-R₁-Q-Z, where A-is a hydrophilic moiety that illustratively

includes Co-Ca-alkyl-hydroxy, substituted amino, quaternary-amino, sulfonate, phosphonate,

carboxylate or a-target; where R₁ is a cholesterol derivative; a C₈-C₂₄ alkyl; C₈-C₂₄ heteroatom

substituted alkyl wherein the heteroatom is O, N, or S; or a bile acid; where Q is a sulfur,

nitrogen, or oxygen; and Z is a polyionic peptide and where A is a hydrophilic moiety is C₀-C₄

alkyl-hydroxy, -substituted amino, -quaternary amino, -sulfonate, -phosphonate, -carboxylate or

a target ligand with the proviso that when A is the C₀-C₄ alkyl-hydroxy, Q is oxygen.

9. (Previously Presented) The method of claim 8, wherein said administration is

oral.

10. (Previously Presented) The method of claim 8, wherein nucleic acid of said

complex is expressed as a protein in said target cells.

11. (Previously Presented) The method of claim 10 wherein said protein is secreted

from said target cells.

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12. (Previously Presented) The method of claim 10 wherein said protein is of a class

selected from the group consisting of: proteases, pituitary hormones, protease inhibitors, growth

factors, cytokines, somatomedians, chemokines, immunoglobulins, gonadotrophins, interleukins,

chemotactins, interferons, and lipid-binding proteins.

13. (Previously Presented) The method of claim 8 wherein nucleic acid of said

complex is selected from the group consisting of: DNA, RNA, mRNA, miRNA, ribozyme, and

antisense sequences.

14. (Previously Presented) The method of claim 8 wherein said complex is

administered as part of a pharmaceutical composition.

15. (Previously Presented) The method of claim 14 wherein said pharmaceutical

composition comprises an active therapeutic compound.

16. (Previously Presented) The method of claim 15 wherein said therapeutic

compound is selected from the group consisting of: an antibiotic, a gamma or beta radiation

emitting species, an anti-inflammatory, an antitumoral, an antiviral, an antibody, a hormone, an

enzyme, antigenic peptide and antigenic protein.

17. (Previously Presented) The method of claim 8 wherein R₁ is a cholesterol

derivative.

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18. (Canceled)

19. (Previously Presented) The method of claim 8, wherein said target cells are

gastrointestinal cells.

20. (Currently Amended) A nucleic acid delivery composition comprising a

conjugating agent-nucleic acid complex having the formula:

$$A-R_1-Q-Y-Z$$

where R_1 is a cholesterol derivative; a C_8 - C_{24} alkyl; C_8 - C_{24} heteroatom substituted alkyl wherein the heteroatom is O, N or S; or a bile acid; where A is a hydrophilic moiety that illustratively includes C_0 - C_4 alkyl-hydroxy, -substituted amino, -quaternary amino, -sulfonate, -phosphonate, -carboxylate or a target ligand; where Q is sulfur, nitrogen, or oxygen; where Y is a linker peptide having a negative, neutral, or positive charge; and where Z is a polyionic peptide with the proviso that when A is the C_0 - C_4 alkyl-hydroxy, Q is oxygen.

21. (Previously Presented) The composition of claim 20 wherein said cholesterol

derivative is selected from the group consisting of: cholestanol, coprostanol, cholic acid,

glycocholic acid, chenodeoxycholic acid, desoxycholic acid, glycochenodeoxycholic acid,

taurocholic acid, and taurochenodeoxycholic acid.

22. (Previously Presented) The composition of claim 20 wherein said cholesterol

derivative is a cholic acid or a deoxycholic acid.

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23. (Previously Presented) The composition of claim 20 wherein said A is C_0 - C_4 alkyl-hydroxy.

24. (Previously Presented) The composition of claim 20 wherein said Q is oxygen.

25. (Canceled)

26. (Previously Presented) The composition of claim 20 wherein Z is polycationic.

27. (Previously Presented) The composition of claim 26 wherein Z contains at least six residues.

28. (Canceled)

29. (Canceled)

30. (Previously Presented) A commercial package comprising a composition of A-R₁-Q-Z according to claim 8 as an active ingredient together with instructions for the use thereof as a nucleic acid delivery agent to a subject.